REMARKS

This communication is considered fully responsive to the Office action mailed January 5, 2005. Claims 2, 4, 6, 8-17, 19-22, 24, 25, 27, and 31-44 were examined and stand rejected. Claims 22 and 34 are hereby amended. No claims are cancelled. Claims 45 and 46 are hereby added. Reexamination and reconsideration are requested.

Specification Objection

An objection has been made to the presentation on page 8 of the specification of "A Local Radial Angular (LORA) Transform L c . . ." as assertedly missing some indication of relationship between the "L" and the "c". The specification is hereby amended to show the proper relationship. Applicants thus respectfully request withdrawal of this objection.

Claim Rejections – 35 USC §102

Claim 31 stands rejected under 35 USC §102(b) as being purportedly anticipated by the U.S. Patent to Fiete et al., No. 5,881,182 (hereafter referred to as "Fiete"). The Applicant respectfully traverses this rejection.

Claim 31 includes "a specified range of sharpness" for the line defects to be detected by the method thereof. Fiete does not have or suggest such. More specifically, Fiete fails to teach or suggest any sharpness and no other reference is cited to demonstrate any inherency thereof; thus, no prima facie case of anticipation is made. Note that "[a] claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987); and see, MPEP 2131. Moreover, "[t]o establish inherency, the extrinsic evidence 'must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of

circumstances is not sufficient.' " *In re Robertson*, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999) (citations omitted) and see MPEP 2112.

The supposition that "there must be a certain measure of sharpness" to "enable" the method of Fiete is without any cited support, and as such cannot stand. Applicants therefore respectfully request withdrawal of this rejection.

Claim Rejections – 35 USC §103

Claim 34 stands rejected under 35 USC §103(a) as being purportedly rendered obvious by Fiete. The Applicant respectfully traverses this rejection.

This rejection is made first on the basis that like claim 31 pursuant to section 102 (above), some "measure of sharpness" must allegedly exist relative to or purportedly be interpretable from the Fiete teaching. However, here as before, there is no cited support for such a supposition, and as such this conclusory allegation cannot sustain a rejection under either section 102 or 103.

Next, the Examiner takes "Official Notice" that "it would have [allegedly] been obvious ... to utilize a computer having software" in executing a process such as that in Fiete. Applicants object to such Official Notice as improperly taken here as the principal point of rejection for claim 34. "It is never appropriate to rely solely on 'common knowledge' in the art without evidentiary support in the record, as the principal evidence upon which a rejection was based." MPEP 2144.03(A) citing *In re Zurko*, 258 F.3d 1379 at 1385, 59 USPQ2d 1693 at 1697. Note also that such a rejection is contrary to all of the basic concepts for determining patentability, whether for computer-implemented inventions or otherwise. See e.g., MPEP 2106 and *State Street Bank & Trust Co. v. Signature Financial Group Inc.*, 149 F. 3d 1368, 47 USPQ2d 1596, (Fed. Cir. 1998), *inter alia*. Thus, this rejection must be withdrawn, or "the examiner must provide an affidavit or declaration setting forth specific factual statements and explanation to support the finding." See 37 CFR 1.104(d)(2) and MPEP 2144.03.

Claims 2, 4, 6, 8-17, 19-22, 25, 27, 32, 33, 35-37, 39-42 and 44 stand rejected under 35 USC §103(a) as being purportedly rendered obvious by the combination of

Fiete and the cited publication of Trifonov, et al., entitled "Local Radial-Angular Transformation of Images" (hereafter referred to as "Trifonov"). The Applicant respectfully traverses these rejections.

As a first point, the law of obviousness requires that "there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings." See e.g., MPEP 2143, *inter alia.*

Fiete and Trifonov cannot be combined under this constraint. Fiete specifically teaches linear, Cartesian analyses of pixel values via a column by column approach. The columnar process itself as well as the Cartesian mathematics derived therefrom are not only incompatible with but do not suggest nor motivate any combination with a radial angular transformation process such as that taught in/by Trifonov.

In Fiete, the analysis is built upon a Cartesian coordinate system, e.g. (x, y) (see col. 3, lines 51-54, where the digital value of $i(x,y)$ is described). The Fiete analysis proceeds in a column by column fashion exploring the relationships of pixel values of $i(x,y)$ to $i(x+1,y)$, the latter representing the value of the next columnar pixel. The analysis then proceeds linearly.

This is nothing like, nor suggestive of the coordinate system of Trifonov, which is angular, radial. The distinctive angular radial process of Trifonov allows for a very different analytical approach which can then make beneficial use of the hexagonal "hexons," *inter alia.* In such a method, the sampling is done of the pixel values surrounding and/or defining a particular hexon. Moving angularly around a particular hexagonal pixel or group of pixels for sampling and analytical comparison is very different from moving an analytical process in a linear columnar fashion. This alone demonstrates that there is no suggestion or motivation in or from either of Fiete or Trifonov for combination one with the other.

Nevertheless, the mathematical results taught in the Trifonov reference also reflect the failure of any asserted combination of Trifonov with Fiete to allegedly provide the presently claimed inventions. Trifonov does teach the use of a local radial angular transform, but does so in the evaluation and determination of the shapes of boundaries in an image. Two points should be noted in this regard; first, that the mathematical

development of a coefficient indicative of the boundary condition in the Trifonov reference is different from the mathematical development in the present case. Second, the reason for such a mathematical distinction is that the boundary condition there is different than the detection of a line in the present case. Luminance differentials are determined in the Trifonov reference corresponding to the two sides of a single boundary. Differently here, the luminance differentials must indicate not only a single boundary, but, the discontinuity of the line itself as detected against and/or across one or more backgrounds, by contrast thereagainst and/or by determination of width, length, orientation and/or by sharpness of edge definition of the line. Thus, the Trifonov reference does not enable line-like determinations beyond the limits of the boundary condition.

Note, present claim 22 is especially distinctive inasmuch as it presents one of the specific manners of local radial angular transform usage wherein the results of the transform; namely, $|c_3|$, is compared against two limits, L_1 and L_2, to determine whether a line-like defect is indicated. This is indeed not taught or suggested by the mathematical development in the Trifonov reference.

Moreover, a combination of Trifonov with Fiete is incompatible inasmuch as either would become inoperative or at the very least changed in the principle of operation. Forcing a radial angular method on the teaching of Fiete would render inoperative the columnar process and/or change the principle of operation. Neither Trifonov nor Fiete demonstrate how the linear regression analyses of Fiete would remain operative in a radial angular mathematical scheme. Similarly, forcing a linear columnar approach on the Trifonov teaching would not only change the principle of operation, but is against the teaching of Trifonov. In Trifonov, a distinction is shown of his hexagonal pixel sampling approach wherein the sampling relies upon the sampling of all adjacent hexagons, the sample size being six (6) as compared the lesser sampling size in a square sampling system where the sample size is four (4) (note, each hexagon or square includes one or a group of pixels to be sampled). Fiete, on the other hand, is only performing a column by column comparison, sample size of one (1) (pixel or group of pixels) at a time. Both Fiete and Trifonov thus teach away from such a combination.

A combination of references cannot render the combined process/apparatus inoperative, or change the principle of operation thereof, or render it less than satisfactory for its original purpose. See MPEP 2143.01. For the reasons given, such would be the case in any asserted combination of Fiete with Trifonov. Thus, the combination is improper here and the rejection based thereon must be withdrawn. Claims 2, 4, 6, 8-17, 19-22, 25, 27, 32, 33, 35-37, 39-42 and 44 may then be allowed.

Dependent claims 24 has all of the elements of the respective independent claims from which they depend and Fiete and Trifonov therefore fail to render this claim obvious for the same reasons presented for claims 2, 4, 6, 8-17, 19-22, 25, 27, 32, 33, 35-37, 39-42 and 44 above regardless the teaching or alleged combinability of Hirani therewith.

Allowance of claims 2, 4, 6, 8-17, 19-22, 24, 25, 27, 31-37, 39-42 and 44 is therefore earnestly requested.

Allowable Subject Matter

Applicants note with appreciation the allowable subject matter of claims 38 and 43. Applicants further note that due to the allowability, as set forth hereinabove, of independent claims 35 and 40 from which claims 38 and 43 respectively depend, these claims 38 and 43 are not herein be amended. Claims 38 and 43 are respectfully requested to be held allowable.
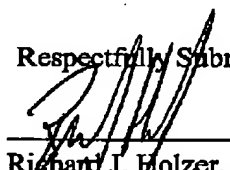
Conclusion

Based on the amendments and remarks herein, the Applicant respectfully requests prompt issuance of a notice of allowance for claims 2, 4, 6, 8-17, 19-22, 24, 25, 27, and 31-44 in this matter.

Respectfully Submitted,

Dated: ___4-5-05___   By: _____

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